@columns

Unleashing the power of innovative aerospace technology....

Air Force
Research Laboratory
AFRL

news@*afrl*

Winter 1999/2000

Official voice of the Air Force Research Laboratory

CIO Topics

Virtual Privacy Network; a stealthy solution to a privacy problem

In 1879 a patent was granted for a device called the cash register. Thus, the triumph of the machine began on the day we started punching keys instead of writing out receipts. Working in this environment, it is easy to forget that though technology has produced the ability to communicate with only a few taps of the keyboard and a mouse click, the information that we jettison into cyber space may not always be secure or protected.

In AFRL, this problem is compounded by the immediacy of communicating with peers in different time zones or states, and the threat of cyber terrorism that frequently targets the pre-eminent science and technology hub for the world's strongest Air Force. A question we've been forced to ask is, "How can we improve the security posture across a lab that is geographically dispersed?"

A technology solution that AFRL has been researching, and plans to implement in Summer 2000, is the Virtual Privacy Network (VPN). The VPN will allow each of AFRL's desktop users to encrypt and send information in an electronic tunnel that is buried in the Internet but invisible to outside threats. It will support e-mail, existing applications currently having problems with base information protection systems, and other information sharing applications.

The Air Force Information Warfare Center recommended a VPN standard to Air Staff and have prototyped the technology successfully across 10 bases. This VPN is base to base technology with no provision for organizational separation on bases or organizations spread across multiple bases. The planned AFRL VPN will provide privacy not only from base to base but organization/base to organization/base combinations. In addition, the technical merit of the technology is universally accepted and no throughput effects are noticed on information travelling by VPN.

The importance of this technology to individuals working in the lab is this: a scientist and his peer in another state are discussing the results of research that is not yet cleared for release to the public. The VPN will allow them to communicate and share information regularly without the fear that their information will be viewed by any outside parties. Additionally, it will work with the existing base information security systems.

Though the VPN has been tested within a lab setting and has yielded outstanding results, AFRL will conduct additional testing to ensure a higher proof of concept, that we can indeed transmit this encrypted information from directorate to directorate and time zone to time zone.

The Sensors Directorate at Wright-Patterson AFB, Ohio, will spearhead the effort to make sure that technology testing on the VPN is completed and established in January. Also involved in this testing will be the communications units at Kirtland AFB, N.M.; Rome, N.Y.; and Hanscom AFB, Mass.

The test will connect the sites, deploy at least one application (a business application, net meeting, C2S2, etc.) across the network. Metrics will be collected and reported to Electronics System Center and the Air Force Materiel Command. The network will eventually be implemented at all AFRL locations. Air Force Communications Agency and AF/SC are then planning to push the concept as a standard across the Air Force.

In a world where the foresight and knowledge of extraordinary minds have created communication technology and its associated privacy problems, it is up to these minds to find solutions. We hope that VPN technology can provide the needed solution to this problem. **@**